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ABSTRACT

Although intonation has been said to be one of the first meaningful units of language that a child acquires, it is difficult to say just what this really means. How does the child learn to distinguish the various grammatical meanings that an intonation can have? It was hypothesized that the child first acquires question and request forms on the basis of intonation contours, but gradually comes to recognize other linguistic markers (illocutionary markers) marking the sentence to be a question or a request. At a later stage of development, therefore, the hypothesis was that the child will answer questions and requests even if the intonation contour did not by itself denote the utterance to be a question or request, as long as there were other markers present to signify to the child that the utterance was a question or request. It was also hypothesized that the adult also uses more intonation-determined questions to the child at a younger age than at an older age. The results support these hypotheses. (Author/CLK)

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THE ACQUISITION OF QUESTION AND REQUEST FORMS IN A JAPANESE CHILD

(Paper presented at the Second Annual Boston University Language Development Conference, September 30 and October 1, 1977)

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Introduction

It has been argued that intonation is one of the first meaningful units of language that a child acquires (Crystal, 1973; Tonkova-Yampol'skaya, 1973). However, it is somewhat difficult to say just what it is that the child acquires that is 'meaningful' in intonation. A single speaker can use various types of intonation with various kinds of expressions. However, it can be observed that one specific intonation pattern does not always characterize a specific grammatical construction. The falling intonation, for example, can be used to command (e.g. Stop that car!), to make a request (e.g. Let me try it.), to make a statement (e.g. I'm studying linguistics.), or to ask a question (e.g. Where's the store?). What is it then that the child first acquires, and how does he learn to differentiate between these various meanings that an intonation can have?

The purpose of this paper is to attempt one answer to this problem by comparing the speeches of a Japanese boy at the age of 2 years 4 months and 2 years 7 months. But before going into the details of the experiment, I will briefly mention some basic types of utterance-final interrogative and request contours found in the speech of a Japanese adult.

On the basis of experiments conducted on 43 Japanese adults Hatsutaro Oishi notes the following about Japanese interrogative sentence-final contours.[1]

1) Interrogatives used in posing questions to oneself are uttered 39.3% of the time with rising intonation, while 60.7% of these utterances are accompanied by falling intonation. (e.g. 'kore boku no kana?'--'Is this mine?')

2) Interrogatives expressed by single interjections or WH-question words are accompanied by rising intonation 96.2% of the time, while only 3.8% of the utterances have falling intonation. (e.g. 'hm?', 'e??'--'Huh?', 'What?')

3) Interrogatives requesting confirmation are accompanied by rising intonation 76.9% of the time, while 23.1% are accompanied by falling intonation. (e.g. 'hon desho?'--'It's a book, isn't it?')

4) Interrogatives requesting choice on the part of the listener take the rising intonation 64.3% of the time, while taking the falling intonation 35.7% of the time. (e.g. 'ringo desu ka, orenji desu ka?'--'Do you want an apple or an orange?')

5) Yes-no questions take the rising intonation 74.9% of the time, while 25.1% are uttered with the falling intonation. (e.g. 'kono hon desu ka?'--'Do you want this book?')

6) Interrogatives requesting some type of explanation from the listener take the rising intonation 73.1% of the time, while taking the falling intonation 26.9% of the time. (e.g. 'nani ga hoshii no?'--'What do you want?')

7) Elliptical interrogative sentences take the rising intonation 78.7% of the time, while taking the falling intonation 21.2% of the time. (e.g. 'hon?'--'The book?', 'hon wa?'—

'(Where's) the book?)

On the basis of these results, Oishi concludes that the Japanese interrogative sentences generally take the rising intonation. (Though there is a flaw in this analysis--whereas the criterion for the analysis employed in 1, 3, 4, 5 and 6 is functional, the criterion used in 2 and 7 is formal--the general conclusion seems to hold: even if 2 and 7 were reanalyzed in terms of function--which would put them either in the categories of confirmation or explanation--it would not change the percentage of rising and falling intonation since their percentage of rising intonation is higher than those in the other categories.)

Granted that Oishi's conclusions are generally valid, the following assumption can be made:

> Interrogatives without some type of interrogative marker other than the intonation contour tend to have higher rates of rising intonation than those which have some marker.

(The interrogative markers mentioned here include particles attached to the end of utterances signaling the utterance to be a question or a request (e.g. kana in 1, desho in 3, ka in 4, and no in 6) and WH-question words (e.g. nani in 6). I will, here, call the former 'illocutionary markers' as opposed to WH-question words.[2]) In other words, elliptical interrogative sentences have a higher rate of rising intonation at the end of the utterance because they are not followed by any illocutionary marker. Theoretically, the difference

should actually be greater than what Oishi's calculations seem to indicate. However, the reason for this seemingly problematic result also seems to reside in Oishi's categorization of elliptical sentence. For example, from a purely theoretical point of view, the following sentences may take either rising or falling intonation.

1. kore hon kana? (I wonder if this is a book.)
2. kore hon ka? (Is this a book?)
3. kore hon da ne? (It's a book, isn't it?)
4. nani ga suki? (What do you like?)

The reason is that these illocutionary markers and WH-question words alone are sufficient to communicate to the listener that a question is being asked: hence, relagating the rising intonation to a purely redundant status. However, elliptical interrogative sentences should take the rising intonation because there is no other means to indicate to the listener that they are questions.

5. kore hon? (Is this a book?)
6. hon? (Is this a book?)

Examples 5 and 6 would be considered affirmative statements, i.e., 'This is a book', if they were accompanied by falling intonation. This much seems clear enough. However, Oishi's problem is in the next example:

7. hon wa? ((Where's) the book?)

This particle wa is not an interrogative marker, but a topicalization particle, and, normally, cannot be used to end an utterance. However, the difference between example 7 and examples 5 and 6, though they are all elliptical sentences, is that 7 becomes a question regardless of the final intonation contour.[3] In other words, the wa functions very similarly to the illocutionary markers in examples 1 to 4. This indicates that wa should be considered at least a pseudo-illocutionary marker, and should be treated separately from the other elliptical sentences. The results, therefore, should show that the wa-less, or 'pure' elliptical sentences have a far higher rate of rising intonation than is suggested from Oishi's figure.

It should also be noted that the use of either a rising or a falling intonation with utterances ending in illocutionary (pseudo-illocutionary) markers will effect subtle meaning differences in some cases. For example, no which when accompanied by rising intonation usually denotes a simple Yes-no question, would ordinarily mean a request for confirmation when accompanied by a falling intonation.[4]

In general, therefore, for anyone trying to learn Japanese it should be more difficult to learn the subtle meaning distinctions conveyed by the illocuationary markers than the simple rising and falling distinction used in utterances without these markers. It should also be easier to learn these simple rising and falling distinctions in meaning than having to learn

them as additional redundant features accompanying the illocutionary markers. Granted that this is true theoretically even in the case of the adult learner, how much more so for a child coming to the language learning scene for the first time in his life?

My hypothesis, therefore, is as follows: the younger a child is the more he will depend on the final intonation contours of the adult's speech to determine the illocutionary meaning of the utterance, while the older he becomes he will be able to distinguish other linguistic cues (such as the illocutionary, pseudo-illocutionary markers and WH-question words) complementing, and, at times, substituting for the intonation contours. The adult will, furthermore, use more intonation-determined utterances (those without any of the markers mentioned above) towards younger infants than towards older infants.

Design of the Experiment

The subject was a Japanese boy, whose parents were college graduates--the father an M.S. from the University of Michigan. Recordings of the boy's conversations with his mother (mostly) were taken when he was 2;04 years old, and another when he was 2;07 years old. This age was thought to be appropriate for this type of experiment because a certain amount of conversation is possible between the child and an adult, but, at the same time, the child's communicative competence is still in

the process of development. The recordings were made in similar circumstances where the mother and the child were reading picture books or looking at family albums; the only difference being that the experimenter was present at the second session. The first recording lasted approximately 25 minutes, from which 283 adult utterances were transcribed. The recording for the second session went well over two hours, but, the transcription was limited to the first 40 minutes in order to preserve a balance with the first recording. A total of 453 adult utterances were transcribed from the second session.

An utterance was transcribed as a question or request, even if the other person did not respond, in the following circumstances:

a) the first utterance had a distinct component, marking the utterance as wanting some kind of response (the illocutionary markers mentioned above and WH-question words);

b) in the case of request for confirmation, the following points were considered: i) sentence final rising contour, ii) persistence of the adult to elicit the response, iii) further response of the adult after the child's response. In cases ii) and iii), the preceding, or original adult utterance was determined to be a question or request.

Responses were considered valid in the following circumstances: as long as the utterance or response did not clearly deviate from the topic of the question, it was considered a

valid response, regardless of intonation pattern.

Results of the Experiment

1. Characteristics of adult input and the child's responses

A comparison was made between the two ages as to the percentage of utterances with clear markings (either intonation contour or other linguistic cues) indicating that the utterance was meant to be responded to. The results show that the percentage of utterances with clear markings for a response decreases from 44.2% at age 2;04 to 33.3% of all adult utterances at age 2;07.

Table 1. Percentage of adult utterances requesting response from child

Age	%
2;04	44.2
2;07	33.3

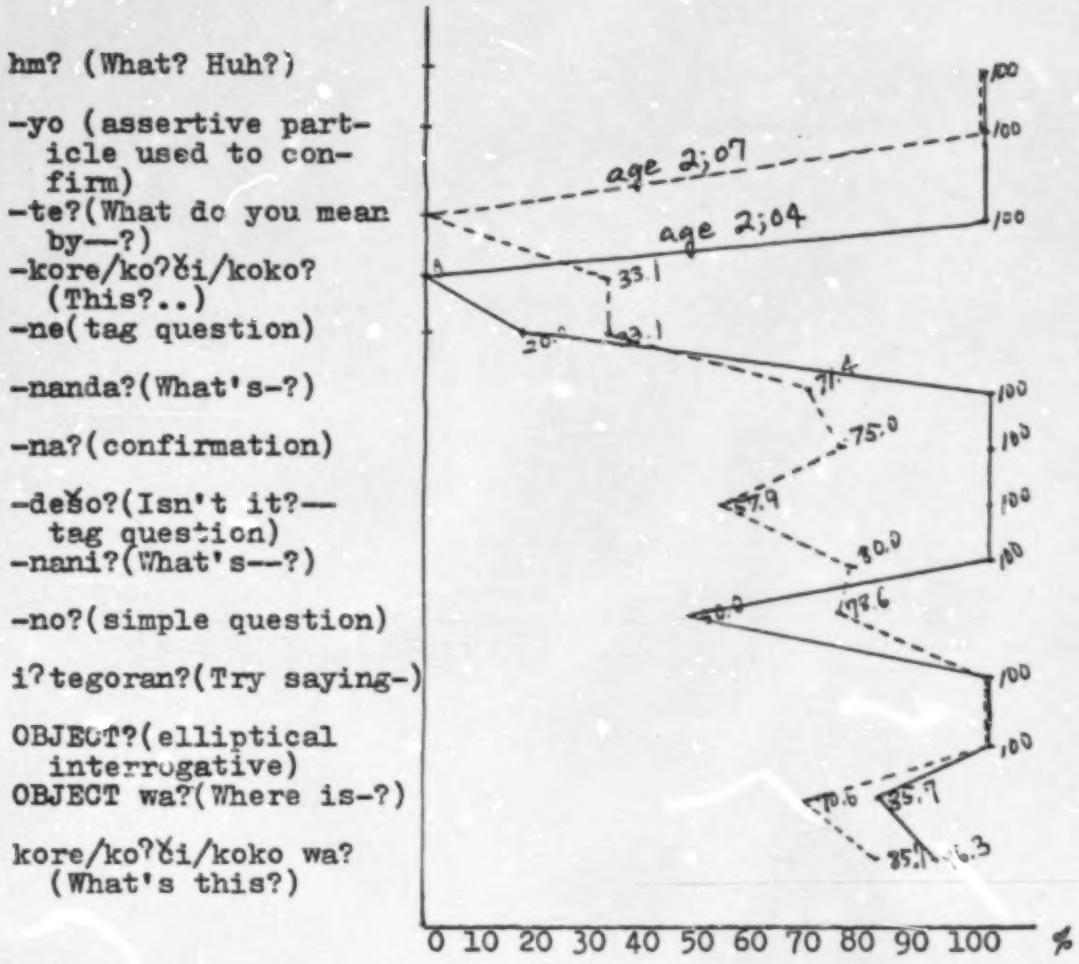
Of these utterances, the percentage of utterances with rising intonation also decreased from 86.4% at age 2;04 to 64.9% at age 2;07.

Table 2. Percentage of adult utterances requesting child's response with rising intonation contour

Age	%
2;04	86.4
2;07	64.9

Furthermore, the rate of rising intonation used by the adult in her/his individual structures also shows a significant decrease in the use of the rising intonation at the later stage

Graph 1. Percentage of utterance-final rising contours in the adult's questions and requests



It was further found that, though, as can be seen above, the interrogative markings used by the adult tended to be quite similar, the distribution of the appearance of these markers differed quite radically between the two ages. (See Table 3 on the following page.) The adult seems to have used these markers more evenly, and therefore, more freely at age 2;07 than at age 2;04.

to 2;04 year-old %	Adult Utterance Characteristics	to 2;07 year-old %
43.2	kore wa	13.9
16.8	OBJ wa	11.3
15.2	i?tegoran	3.9
3.2	OBJ #	3.4
3.2	--no	9.4
2.4	desho	12.6
4.0	--ne	19.9
2.4	--te	0.7
1.6	nani	6.7
1.6	kore(koko)	1.9
1.6	hm	0.7
0.8	--na	2.6
0.8	nanda	4.6
0.8	yo	1.9
0.8	ieru	--
0.8	--ka	--
0.8	ikutsu	--
--	dare	1.3
--	dore	2.6
--	daro	2.6

Table 3. Characteristics and their percentage of occurence in the adults' requests and questions.

Furthermore, a comparison of the percentage of these utterances which were responded to in one way or another showed the following results:

Table 4. Percentage of question and requests answered by the child

At 2;04				At 2;07		
answered	answered	Total answered	Markers	Total answered	answered	answered
50.0%	90.4%	88.9%	--wa	100%	100%	100%
66.7	72.2	71.4	OBJ wa	100	100	100
----	78.9	78.9	i? tego-ran	100	100	---
---	75.0	75.0	OBJ #	100	100	---
50.0	100	75.0	--no	92.9	90.9	100
---	50.0	50.0	nani	80.0	75.0	100
---	0.0	0.0	desho	89.5	100	75.0
---	100	100	--na	100	100	100
---	100	100	nanda	71.4	60.0	100
100	100	100	--ne	96.7	100	95.0
---	0.0	0.0	hm	100	100	---
100	---	100	--te	100	---	100
---	100	100	--yo	100	100	---
100	---	100	kore	66.7	0.0	100
---	100	100	ieru	---	---	---
---	---	---	dare	100	100	100
100	---	100	--ka	---	---	---
---	---	---	dore	100	100	100
100	---	100	ikutsu	---	---	---
---	---	---	daro	100	---	100
82.4	80.6	80.8	Total%	94.1	93.9	94.3

Though the total percentage of relevant responses seems to show that the child could answer both rising and falling questions and requests with about the same amount of ability, it is interesting to note that in question with --wa, OBJ wa, and --no (three of the most often used forms of the interrogative by the adult) the percentage answered by the child differs substantially between questions asked in rising and falling

intonations. It can be seen that the child has a much harder time answering questions with falling intonation at age 2;04 than at age 2;07. (One interesting phenomenon in this data can be seen in the inability of the child to respond at all to questions ending in the confirmation marker desho at age 2;04, even though it appeared more than several other markers which were properly responded to by the child. Furthermore, all the questions were asked in rising intonation. This seems to suggest that the child refers not only to the intonation contour alone, but also to other linguistic cues, such as, in this example, the meanings of illocutionary markers, in discerning the type of question being asked.)

Discussion of the Results

Looking at the results it seems that the child does actually respond better to sentences with rising intonation than to sentences with falling intonation at an early stage of development: he seems to start by first acquiring the rising intonation as the sign to respond to. The fact that the child was able to answer questions given with falling intonation much better at a later stage in the cases of interrogative structures most frequently used by the adult shows that the child is learning to distinguish subtler illocutionary expressions which need to be taken into consideration aside from the intonation contours.

Furthermore, the most common interrogative particle ka

appeared only a couple of times at age 2;04, and did not appear at all at age 2;07. However, the other interrogative particle no, also one of the most common interrogative particles used in adult Japanese speech, appears more often. Two reasons may be considered for this phenomenon: a) no is more often used by female speakers than ka (and it was mostly the mother who was speaking with the child), and b) straightforward questions usually require judgment and explanation on the part of the listener, and it is difficult to have the child make judgments and give explanations at this age. It is easier, on the other hand, to ask the child to reconfirm an answer that the speaker already knows. Therefore, it seems plausible that no, which is more a confirming type of interrogative marker, would appear more frequently than ka.

The results also suggest that, though intonation seems to be the primary illocutionary marker that the child looks for when he is younger, he also seems to be at a transitional stage where he gradually begins to distinguish the illocutionary effects of the adult utterance on the basis of certain specific illocutionary markers other than simple intonation. (e.g. the supposed confusion that the child seems to experience with utterances ending in desho.)

Conclusion

In this paper, I tried to test the hypothesis that younger infants rely more on intonation contours to grasp the illocu-

tionary meanings of what other people say than do older infants. I also tried to show that adults acknowledged this, although maybe not consciously, and tended to use more intonation-based expressions towards their children when the children were younger.

The general conclusion seems to support this hypothesis. Intonation, it seems, does play an important role in the acquisition of language. Although I hesitate to say that the rising intonation for questions and the falling intonation for statements and commands, as well as for strong confirmations, are universal phenomena[5], it seems to be true, in the case of Japanese, that there is a basic interrogative intonation contour (the rising contour) which is modified subsequently by various illocutionary markers (particles, etc.) to distinguish the subtle meaning differences which cannot be handled by intonation alone.

If the general conclusions of this paper are, in fact, true, it seems to me that, not only intonation, but also other suprasegmental features of language (e.g. pitch, stress, rhythm, etc.) might actually be playing a more important role in the beginning stages of child language acquisition. Some general questions which I feel need further study in the future from this point of view are: what is the role of pitch, stress, and rhythm in the child's acquisition of word order and grammatical relations?[6] why do children's games so often make use of uniform pitch and rhythm patterns? why do children respond better to exaggerated

speech than to normal speech? what bearing should this have on children's foreign language learning: why not concentrate more on the intonational and other suprasegmental features of language in the beginning stages of children's foreign language learning?[7]

Footnotes

1. Cf. Hatsutaro Oishi(1965). I have taken only those results from his experiment which seemed relevant to the present investigation.

2. The illocutionary markers found in the present study are as follows: ka, no (most commonly used interrogative particles in adult speech; there are, however, subtle meaning differences and usage differences between the two); ne, na, desho, daro, yo (all used in interrogatives of confirmation; yo is usually used only in assertive expressions, but can also be used to confirm when used with rising intonation). The WH-question words that appear are: nani, nanda (What?); dare (Who?); dore (Which one?); ikutsu (How many?).

3. Other markers which appear only in elliptical sentences, and yet, seem to have some characteristically interrogative effects are: te (What do you mean by___?; Please say ___.); kore/koko/ko chi (usually used only as simple demonstrative pronouns, but when used alone, can be used as an interrogative of confirmation). Other expressions considered to be significant markers of the interrogative are: i?tegoran (Please say __.); ieru (Can you say ___?).

4. Although most of the illocutionary markers follow the same pattern as no, na is a little different in that it becomes an emphatic negative command when accompanied by falling intonation (e.g. iku na. 'Don't go.')

5. Cf. Bowerman (1975). She mentions that in Finnish the rising intonation is not used in interrogatives.

6. Cf. Yoshida (1977). Even in a language like Japanese, which is often considered a word order free language, there are certain semantic and syntactic constraints which seem to indicate that there is a basic order in which noun phrases appear. If so, does the adult follow this basic order, and which elements within the utterance does the adult place the highest pitches?

7. Cf. Yoshida & Kasajima (1976). Also, Encyclopaedia Britannica, Japan (1977). In the first article, I tried to develop some sort of foreign language teaching theory based on the importance of considering the stages of congitive development of the learner. In the second project with Britannica, I tried to materialize this idea by creating a TEFL program for infants from the point of view of intonation being the first meaningful element of speech that the child acquires.

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